Technology Opportunity
Glenn Research Center • Cleveland • Ohio
Technology Transfer & Partnership Office
TOP3–00225

8- by 6-Foot Supersonic Wind Tunnel

Facility Description

The 8- by 6-Foot Supersonic Wind Tunnel is a world-class test facility that provides researchers the opportunity to explore the subsonic, transonic and supersonic speed range. This facility supports research testing of advanced aircraft and launch vehicle concepts. It is NASA's only transonic propulsion wind tunnel, operating from Mach 0.25 to 2.0 and at very low speeds from 0 to Mach 0.1. It is equipped to accommodate aerodynamic (force and moment) and propulsion scale models.

Facility Benefits

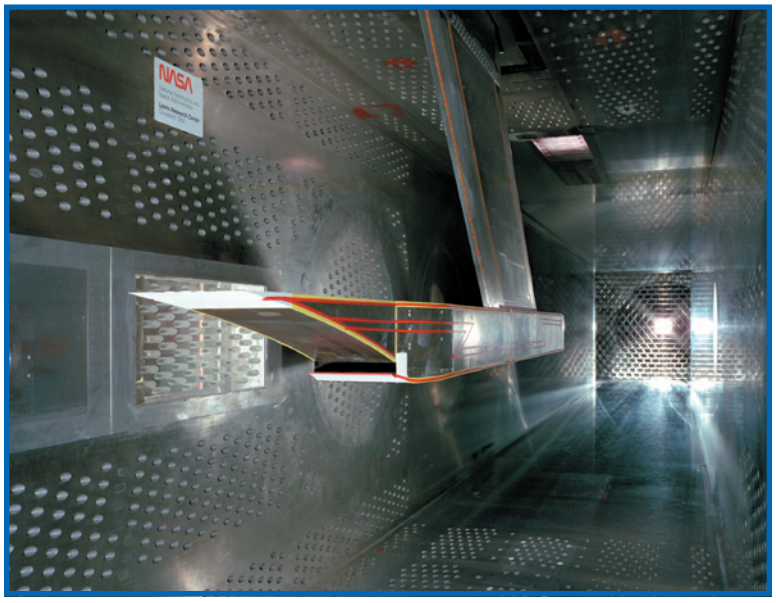
- Calibrated and documented test section conditions
- Real-time data acquisition and display in both alphanumeric and graphical format
- Standardized data acquisition systems at all Glenn wind tunnel facilities
- Integrated data acquisition and model actuation system provides for efficient, cost-effective testing
- Aerodynamic and propulsion cycle operating modes
- Model support systems (hydraulics, exhaust, high-pressure air, fuels, etc.)
- Flow visualization systems—Schlieren, oil flow, and pressure-sensitive paint
- Experienced staff of technicians, engineers, researchers, and operators
- Accommodates government and private industry research programs
- When coupled with NASA Glenn's 10- by 10-Foot SWT, provides aerodynamic and propulsion test capabilities from low-subsonic through high-subsonic Mach range

Commercial Applications

- Aircraft and missile development
- Next-generation launch vehicles
- Jet and rocket engines

Programs and Projects Supported

- National Aerospace Plane (NASP)
- Joint Strike Fighter (JSF)
- Advanced Ducted Propeller (ADP)
- Space Shuttle
- Advanced Tactical Fighter
- High-Speed Civil Transport
- Orbital Space Plane (OSP)



National Aerospace Plane (NASP).

Capabilities

8×6 Supersonic Propulsion	
Test section speed, Mach	0.0 to 0.1 0.25 to 2.0
Simulated altitude, ft	1000 to 35 000
Test section Reynolds number/ft	3.6×10^6 –2.7×10^6
Dynamic pressure, lbf/ft^2	200 to 1240
	520 to 710
Auxiliary air supply At 40 psig At 150 psig At 450 psig Model exhaust	 30 lbm/s 30 lbm/s 30 lbm/s Variable
High-pressure air storage at 2600 psig, scf	981 000
Fuels, test section total temperature	Gaseous hydrogen

Facility Testing Information

http://facilities.grc.nasa.gov

Contacts

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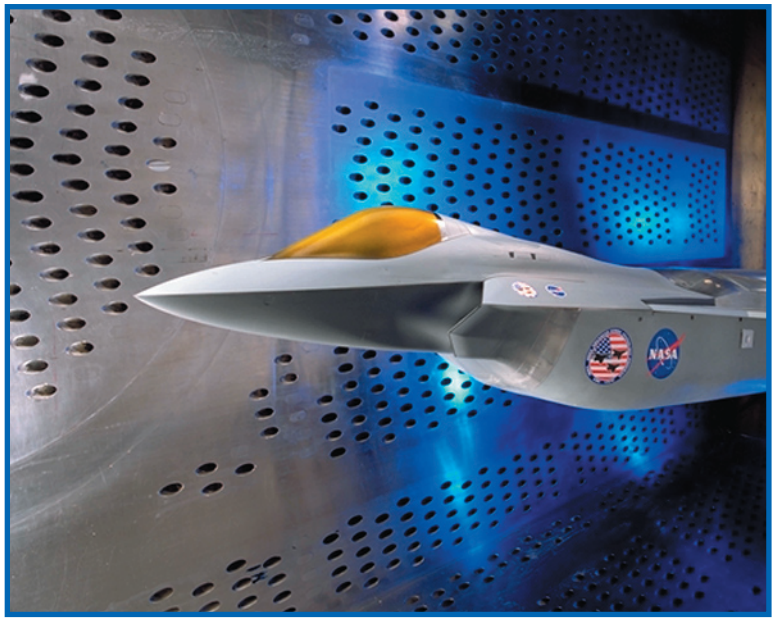

Joint Strike Fighter (JSF) model.

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